



Energy Management

	Energy Meter	Energy Meter	Power Analyzer	Multifunction Meter
Types	EM1-DIN	EM2-DIN	WM1-DIN	WM12-DIN
				
Dimensions (mm) H x W x D	89 x 35 x 58.5	89 x 107 x 58.5	89 x 71.5 x 58.5	90 x 107 x 64
Function	1-phase energy meter. 1-phase system. Active energy measurement.	1 or 3-phase energy meter. 1-phase, 3-phase, 3 or 4 wires. Active reactive energy metering (partial and total).	1 or 3-phase power analyzer. 1-phase, 3-phase, 3 or 4 wires. Measurement of: V_{L-N} or V_{L-L} , A, W, VA, var, Wh, VAh, varh.	3-phase multifunction power indicator. System: V_{LL} , V_{LN} , An, VA, VAdmd, Wdmd, W, var, PF, Hz. Max: A, Wdmd. Single phase: V_{LL} , V_{LN} , A, VA, W, var, PF
Input Specifications				
Range code	230 VAC - 22.5 AAC [AV8]	250/433 VAC - 5 AAC [AV5]	400 VAC(1-phase)/500 VAC(3-phase)-5/27AAC 3-phase system with neutral [27A]. As above but for measurement on 3-phase without neutral [TX instead of PX] $\pm 2\%$ fs $\pm 0.5\%$ (V, A)	400/660V _{L-L} /5(6)AAC [AV5] 100/208V _{L-L} /5(6)AAC [AV6]
Accuracy	Class2 (EN61036)	$\pm 1\%$ RDG	$\pm 2\%$ fs $\pm 0.5\%$ (V, A)	Class 0.5 (V-A)
Display	5+1 digits Electromech. display	6-digits backlighted LCD	3-digits red LED	3x3 DGT LED
Sampling Rate				1.5 samples/s
Output Specifications				
Serial communication		RS 485 output + 1 relay NO [XS] Standard [XX]	RS 485 (1-phase 3-phase system with neutral [RX]) RS 485 (1-phase 3-phase system without neutral [SX]); both instead of "PX"	RS 485 port (on request) [S]
Pulse	1 pulse output (on request): 10 pulse/kWh		1 programmable open collector pulse out [PX]*	
Alarm		1 relay output (driven only by serial comm.)	1 SSR alarm output [1]** instead of 0 (no alarm)	
General Specifications				
Power supply	230 VAC [D]	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D]	115 VAC [C] 230 VAC [D]	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D]
Approvals/Marks	CE	CE	CE	CE
References				
* Only without alarm	EM1-DIN AV8 1 D XX		WM1-DIN 27A A D O PX	
** Only without pulse	EM1-DIN AV8 1 D PX		WM1-DIN 27A A D O XX	
No serial Output	24 VAC 48 VAC 115 VAC 230 VAC	EM2-DIN AV5 3 A XX EM2-DIN AV5 3 B XX EM2-DIN AV5 3 C XX EM2-DIN AV5 3 D XX	WM1-DIN 27A A C O XX WM1-DIN 27A A D O XX	
Serial Output	24 VAC 48 VAC 115 VAC 230 VAC	EM2-DIN AV5 3 A XS EM2-DIN AV5 3 B XS EM2-DIN AV5 3 C XS EM2-DIN AV5 3 D XS	WM1-DIN 27A A C O RX WM1-DIN 27A A D O RX	
Ordering References				

See pag. 103





	Power Analyzer	Energy Meter	Energy Meter
Types	WM2-DIN	EM3-DIN	EM4-DIN
			
Dimensions (mm) H x W x D	89 x 107 x 58.5	162.5 x 90 x 63	162.5 x 90 x 63
Description		MODULAR	MODULAR
Function	1 or 3-phase power analyzer. 1-phase, 3-phase, 3 or 4 wires. Measurement of: kW, kvar PF, V _{L-L} , V _{L-N} , A, kWh tot/par, kvarh tot/par.	2-phase, 3-phase 3 or 4 wires energy meter. Direct connection up to 90 A. 6+1 dgt electro- mechanical display.	3-phase energy meter. Direct connection up to 90 A. Back-lighted LCD display. 3 1/2 dgt instantaneous variables read out, 8+ 7 1/2 dgt energy read out Measurement of system and phase variables, energy by timeperiods, m ³ H ₂ O and m ³ GAS.
Input Specifications			
Range code	433 VAC - 5 AAC [AV5]	208V _{L-L} [AV8], 400V _{L-L} [AV9], 660V _{L-L} [AV3]/20(90)AAC. 3-phase unbalanced load [3]	100V _{L-L} [AV6], 208V _{L-L} [AV4], 400V _{L-L} [AV5], 660V _{L-L} [AV7] 5(10) AAC; 208V _{L-L} [AV0], 400V _{L-L} [AV1], 660V _{L-L} [AV3] 20(90) AAC;
Accuracy	±1% fs		
Active energy		Class 2: (EN61036)	Class 1: (EN61036)
Reactive energy		Class 3: (EN61268)	Class 2: (EN61268)
Display	3-digits backlighted LCD (6-digits for energy)		
Output Specifications			
Out 1 (Pulse)	1 programmable open collector pulse out [P]	Dual pulse outputs (NPN transistor) [O]	Dual pulse output module (NPN trans.) [O]
Out 1 (Alarm)			1 alarm output module [O] (NPN trans.) 30 VDC//100 mA Max.
Out 2 (Serial communication)	RS 485 output [PS] Standard [PX]		RS422/485 serial port [SO]
Inputs			2 digital inputs module
General Specifications			
Power supply	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D]	Self power supply [X]: 400VAC 208VAC VL-L Auxiliary power supply: 230VAC[D], 115VAC[C]	Self power supply: 400VAC 208VAC VL-L Auxiliary power supply: 230[D], 115[C], 48[B], 24 [A]VAC 18 to 60 VDC [4]
Approvals/Marks	CE	CE	CE
References	WM2-DIN AV5 3 A P X WM2-DIN AV5 3 B P X WM2-DIN AV5 3 C P X WM2-DIN AV5 3 D P X WM2-DIN AV5 3 A P S WM2-DIN AV5 3 B P S WM2-DIN AV5 3 C P S WM2-DIN AV5 3 D P S		
Ordering References		See pag. 102	See pag. 102



	Power Analyzer	Power Transducer	Power Transducer
Types	WM22-DIN	SPT-90	PQT-90
			
Dimensions (mm) H x W x D	162.5 x 90 x 63	90 x 90 x 138	90 x 90 x 138
Description	MODULAR	MODULAR	MODULAR
Function	3-phase power analyzer. Direct connection up to 90 A. Back-lighted LCD display. 4 x 3 1/2 dgt instantaneous variables read out, 7 1/2 dgt energy read out. Measurement of system and phase variables. Measurement of THD.	3-phase transducer. 1-phase, 3-phase 3 or 4 wires. Measurement of: W, Wdmd, VA, var, PF, Wh, VAh, varh, V _{L-L} sys, VL1-N, VL2-N, VL3-N, Hz. Programming unit or programming software	Power quality transducer. 32 bit μ P based. Alarm outputs, SMS messages. Measurement of all instantaneous variables. Energy, water and gas metering. 2MB memory+ Real time clock (on request).
Input Specifications			
Range code	100V _{L-L} [AV6], 208V _{L-L} [AV4], 400V _{L-L} [AV5], 660V _{L-L} [AV7] 5(10) AAC; 208V _{L-L} [AV0], 400V _{L-L} [AV1], 660V _{L-L} [AV3] 20(90) AAC;	100VAC 1A[AV1]; 100VAC 5A[AV3]; 433VAC 1A [AV4]; 433VAC 5A[AV5]; 690VAC 5A[AV7]	240/415 VAC-1/5 AAC [AV5] 400/690 VAC-1/5 AAC [AV7]
Accuracy		$\pm 5\%$ fs	class 0.5 (V-A)
Active energy	Class 1: (EN61036)		
Reactive energy	Class 2: (EN61268)		
Sampling Rate			10 samples /s
Output Specifications			
Out 1 (Pulse)	Dual pulse output module (NPN trans.)[O]	Single /dual pulse, open collector	Up to 2 single/dual open collector or relay modules
Out 1 (Alarm)	1 alarm output module [O] (NPN tr) 30 VDC//100 mA Max.	Single/dual alarm setpoint relay	Up to 2 single/dual open collector or relay modules
Out 2 (Analogue)	1 analogue output : 0 to 20 mADC [A1], or 0 to 10 VDC [V1]	Single/dual analogue output	
Out 2 (Serial communication)	RS422/485 serial port [S0]	RS485 multidrop bidirectional	RS 422/485 port, RS232 port + RTC+2MB data or RS232+RTC
Inputs		3 digital inputs	Up to 6 digital inputs
Options		Programming key-pad [K]; RS232 Port [S]	Up to 2 single/dual analog. output modules
General Specifications			
Power supply	Self power supply: 400VAC 208VAC VL-L Auxiliary power supply: 230[D], 115[C], 48[B], 24 [A]VAC 18 to 60 VDC [4]	18 to 60 VAC/DC [L] 90 to 260 VAC/DC [H]	18 to 60 VAC/DC [L] 90 to 260 VAC/DC [H]
Approvals/Marks	CE	CE - UL - CSA	CE
Ordering References	See pag. 102	See pag. 103	See pag. 103





	Energy Meter	Multifunction Meter	Power Analyzer
Types	EM2-96	WM12-96	WM2-96
			
Dimensions (mm) H x W x D	96 x 96 x 124	96 x 96 x 46	96 x 96 x 124
Description	MODULAR 3-phase energy meter. 1-phase, 3-phase, 3 or 4 wires. Active reactive energy metering (partial and total).	3-phase multifunction power indicator. System: V_{LL} , V_{LN} , A_n , V_A , V_{Admd} , W_{dmd} , W , var , PF , Hz . Max: A , W_{dmd} Single phase: V_{LL} , V_{LN} , A , V_A , W , var , PF	MODULAR 3-phase power analyzer. 1-phase, 3-phase, 3 or 4 wires. Measurements of: kW , $kvar$, PF , kWh , $kvarh$, A , V_{LL} , $VL1-N$, avg $VL2-N$, $VL3-N$.
Input Specifications			
Range Code	433 VAC _{L-L} -5 AAC [AV5] [AC1014]; 690 _{L-L} VAC- 5 AAC [AV7] [AC1015]	400/660V _{L-L} /5(6)AAC [AV5] 100/208V _{L-L} /5(6)AAC [AV6]	433 VAC _{L-L} -5 AAC [AV5] [AC1014]; 690 _{L-L} VAC- 5 AAC [AV7] [AC1015]
Accuracy	$\pm 1\%$ fs RDG	Class 0.5 (V-A)	$\pm 0.5\%$ fs (V, A)
Display	6-digit backlighted LCD	3x3 DGT LED	3-digit backlighted LCD (6-digits for energy).
Sampling Rate	3 times /s	1.5 samples/s	3 times /s
Output Specifications			
Serial communication output	RS 422/485 port	RS 485 port (on request) [S]	RS 422/485 port
Alarm output	Single relay SPDT; dual relay SPDT;		
Pulse output	Single NPN transistor; dual NPN transistor		Single NPN transistor; dual NPN transistor; Single relay SPDT; dual relay SPDT
General Specifications			
Power supply	24 VAC 48 VAC 115VAC 230 VAC 18 to 60 VAC/DC 90 to 260 VAC/DC	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D]	24 VAC 48 VAC 115VAC 230 VAC 18 to 60 VAC/DC 90 to 260 VAC/DC
Approvals/Marks	CE - UL - CSA	CE	CE - UL - CSA
Note	The alarm outputs are driven only by the serial communication.		
Ordering References	See pag. 102	See pag. 103	See pag. 102



	Power Analyzer	Utility Meter	Power Analyzer	Power Analyzer
Types	WM23-96	WM24-96	WM3-96	WM4-96
				
Dimensions (mm) H x W x D	96 x 96 x 140	96 x 96 x 140	96 x 96 x 124	96 x 96 x 124
Description	3-phase power quality analyzer System: V_{LN} , V_{LL} , An, VA, VAdmd, Wdmd, W, var, PF, Hz, total/partial varh, gas, H ₂ O. Single phase: V_{LN} , V_{LL} , A, W, var, PF, THD.	3-phase universal utility meter System: V_{LN} , VA, VAdmd, Wdmd, W, var, PF, Hz, total/partial varh, gas, H ₂ O. Single phase: V_{LN} , A, W, var, PF	3-phase power quality analyzer 32 bit μ P based. 1-phase, 3-phase, 3 or 4 wires. Measurements of: kW, kvar, PF, kWh, kvarh, A, V_{L-L} , VL1-N, avg VL2-N, VL3-N, THD, VL1, VL2, VL3, Hz, Wdmd, VAdmd.	Universal utility meter and power analyzer. 32 bit μ P based. Load profile indication. Alarm outputs, SMS messages. Measurement of all instantaneous variables. Energy, water and gas meter.
Input Specifications				
Range Code	57/100V _{L-L} /5(6)AAC [AV6], 120/208V _{L-L} /5(6)AAC [AV4], 230/400V _{L-L} /5(6)AAC [AV5], 380/660V _{L-L} /5(6)AAC [AV7]	57/100V _{L-L} /5(6)AAC [AV6], 120/208V _{L-L} /5(6)AAC [AV4], 230/400V _{L-L} /5(6)AAC [AV5], 380/660V _{L-L} /5(6)AAC [AV7]	433 VAC-1/5 AAC [AV5] 690 VAC-1/5 AAC [AV7]	433 VAC-1/5 AAC [AV5] 690 VAC-1/5 AAC [AV7]
Accuracy	Class 0.5 (V-A)	Class 0.5 (V-A)	$\pm 0.5\%$ fs (V, A)	$\pm 0.5\%$ fs (V, A)
Display	4x3 1/2 DGT LCD (back lighted)	4x3 1/2 DGT LCD (back lighted)	4x4 digits backligh. LCD (4x9 digits for energy).	4x4 digits backligh. LCD (4x9 digits for energy).
Sampling Rate	1.5 samples/s	1.5 samples/s	10 times /s	10 times /s
Output Specifications				
Serial communication output	RS 485 port (on request) [S1] RS 232 port (on request) [S]	RS 485 port (on request) [S1] RS 232 port (on request) [S]	RS 422/485 port RS232 port + RTC	RS 422/485 port, RS232 port + RTC + 2MB data or RS232 + RTC
Alarm output	Up to 2 single/dual open collector or relay modules	Up to 2 single/dual open collector or relay modules	Up to 2 single/dual open collector or relay modules	Up to 2 single/dual open collector or relay modules
Pulse output		Up to 2 single/dual open collector or relay modules	Up to 2 single/dual open collector or relay modules	Up to 2 single/dual open collector or relay modules
Digital input	Up to 3 (W/VAdmd sync.)	Up to 3 (time per. mngr.)	Up to 3 digital inputs	Up to 6 digital inputs
Analogue output	Up to 1 (mA/V) analog. output module		Up to 2 single/dual analog. output modules	
General Specifications				
Power supply	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D] 18 to 60 VAC/DC [L] 90 to 260 VAC/DC [H]	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D] 18 to 60 VAC/DC [L] 90 to 260 VAC/DC [H]	18 to 60 VAC/DC 90 to 260 VAC/DC	18 to 60 VAC/DC 90 to 260 VAC/DC
Approvals/Marks	CE	CE	CE - UL - CSA	CE - UL - CSA
Ordering References				
	See pag. 103	See pag. 103	See pag. 104	See pag. 104